How to remove a bent intramedullary nail

A technical note

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We describe our method of using a high-speed drill to make a controlled weakening of the nail before removal.

Technique

A lateral incision exposes the lateral aspect of the femur. The locking screws are removed. Then using an Ansbach® high-speed drill, the nail is perforated. Metal debris is irrigated and suctioned from the fracture site. Once the nail is weakened, it is easily straightened during removal by standard methods. We used this technique in 2 cases.

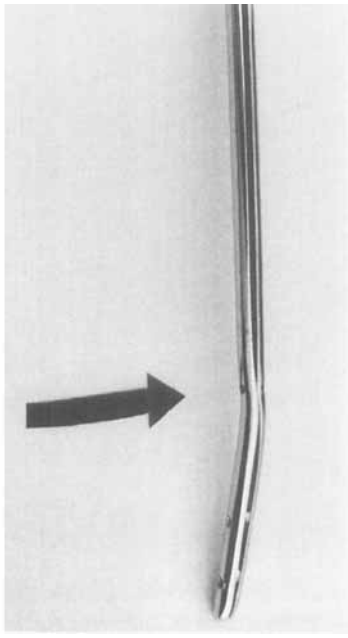
Case 1

A 24-year-old man was admitted after a motorcycle accident. 8 months before this, he had been operated on with a Gamma nail because of a femoral shaft fracture. The fracture had not healed and the new accident caused an angulation of about 25°. The patient was operated on using our method, and the nail was replaced by a Grosse-Kempf nail. 4 months later, the fracture had healed.

Case 2

A 17-year-old youth, involved in a traffic accident, sustained a femoral shaft fracture and was treated with an AO-nail. 6 months later, when the fracture had healed, the patient was once again injured in a car accident, which resulted in a refracture and a 25° bending of the nail. He was operated on with the same

Case 1. Femoral nonunion with a bent Gamma nail.



Case 1. The AO-nail removed after drilling a hole (arrow).

Case 2. Refracture with a bent AO-nail.

method and the nail was replaced with another AO-nail, larger in diameter. The follow-up 8 months later showed complete healing of the fracture.

Discussion

Traditionally, removal of a bent intramedullary nail requires either in situ straightening through application of a substantial external force (Patterson and Ramser 1991) or opening of the fracture site, with complete sectioning of the nail (Burzynski and Scheid 1994). The first method cannot be done with high-strength nails (Gamma, Grosse-Kempf), and the second requires major surgery. Our method is easier and simpler.

Burzynski N, Scheid D K. A modified technique for removing a bent intramedullary nail minimizing bone and soft tissue dissection. J Orthop Trauma 1994; 8 (2): 181-2.

Patterson R H, Ramser J R Jr. Technique for treatment of a bent Russell-Taylor femoral nail. J Orthop Trauma 1991; 5 (4): 506-8.